

28 APR 2006

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Article No. 7004 2510 0006 9726 6322

Mr. Martin Smith
Director, Corrective Measures & Landfill Engineering
Clean Harbors Environmental Services, Inc.
13652 CR 180
Carthage, MO 64836

RE: RCRA Facility Investigation (RFI)
Response to Comments dated January 20, 2006
Clean Harbors Kansas (CHK), LLC
EPA I.D. # KSD007246846

Dear Mr. Smith:

The Environmental Protection Agency (EPA) Region 7 and the Kansas Department of Health and Environment (KDHE) are in receipt of the above referenced responses to EPA comments on the facility *RFI Addendum Report* dated August 29, 2005. The submittal included replacement pages with amended text for inclusion in the *RFI Final Report* (January 20, 2005), as requested by the agencies. With the inclusion of the amended text, EPA and KDHE consider the characterization of the site for the purposes of the RCRA Facility Investigation complete. This letter represents "Notice of Approval," with comments noted below, of the *RFI Final Report*, including the *RFI Addendum*.

1. In response to EPA's comment regarding the creek as "*an hydraulic barrier to shallow ground water flow that would preclude appreciable migration of ground water from one side to the other,*" the facility states, "*...it is reasonable to conclude that the creek is a hydraulic barrier.*" The report also states, "*...it is reasonable to expect some dispersion of constituents within the alluvial channel of the creek, which would explain the trace levels of constituents that have been detected at SK 13S.*" EPA/KDHE cannot accept both interpretations, that the creek is and is not an hydraulic barrier.

2. The data demonstrate the extent of the down gradient contaminant plume(s) have not been defined, both along the southern perimeter boundary of the facility, to the east/southeast of the facility, as well as across the east fork of Chilsom Creek. Several contaminants have been consistently detected above the Federal Maximum Contaminant Levels (MCLs) near and along the down gradient facility boundary to the south (well pairs SK-2S and SK-2D; SK-3S and SK-3D; SK-4S and SK-4D; and SK-12S and SK 12D.) Also of note, the concentrations in several of these wells demonstrate increasing concentration trends. Because the extent of the down

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gradient contaminant plume has not been defined to the south of the facility boundary and contaminants are detected across the east fork of Chilsom Creek, the *Determination Result* for the Environmental Indicator 'Migration of Contaminated Ground Water Under Control' (RCRAInfo Code CA750) has been drafted as 'No - Unacceptable migration of contaminated ground water is observed or expected.'

3. EPA and KDHE reiterate the request that CHK sample all facility wells at least semi-annually. EPA and KDHE note the data and the data analyses presented in the January 20, 2006 response to comments do not demonstrate annual ground water monitoring will be sufficiently protective of human health and the environment, especially in light of the increasing trends in contaminant concentrations in several of the facility down gradient perimeter wells. EPA will consider a reduction in sampling frequency following two years of semi-annual monitoring, if the data prove such a reduction is sufficiently protective.

4. EPA and KDHE request the facility produce isoconcentration maps of the following constituents for the samples collected during the Spring 2006 monitoring event: tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, vinyl chloride, 1,1,1-trichloroethane, and total volatile organic compounds to be included in the forthcoming Corrective Measures Study (CMS.) In addition, EPA and KDHE request the facility also prepare a potentiometric contour map of the deep aquifer along with the shallow aquifer, and place ground water levels on revised cross sections for inclusion in the forthcoming CMS. These figures will add greatly to the understanding of the site and assist in the remedy selection process.

5. Please find included as an enclosure to this letter specific comments pertaining to the Health Risk Assessment Work Plan dated February 21, 2006. EPA expects that these comments will be incorporated into the Health Risk Assessment.

Please submit the Health Risk Assessment within 90 days receipt of this letter. If you have any questions about the contents of this letter, please do not hesitate to contact me at (913) 551-7210. The EPA and KDHE appreciate your cooperation as well as continued efforts to meet the corrective action obligations specified in the facility permit.

Sincerely,

Lisa A. Gotto
Project Manager

Enclosure

cc: John Cook
KDHE/BER
Brian C. Martinek
Cameron-Cole

ARTD/RCAP:cas:h/LGOTTO/CHK.FINAL.FINAL.RFI.APPROVAL.4.06.DOC/041406



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

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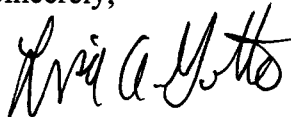
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Sincerely,



Lisa A. Gotto
Project Manager

Enclosure

cc: John Cook
KDHE/BER
Brian C. Martinek
Cameron-Cole

Attachment I

Review of Health Risk Assessment Work Plan for Clean Harbors Kansas, LLC, (February 2006).

Review of the subject document included examining the response to comments on the RCRA Facility Investigation (RFI) addendum. Provided below are comments and recommendations to be incorporated in the Health Risk Assessment.

General Comments

1. Throughout the document it states chemicals with maximum detected concentrations below screening values (i.e., Region 9 Preliminary Remediation Goals) will be eliminated from further evaluation. Unless there is a large number of chemicals, this approach is inconsistent with Section 5.9 in *Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A) (RAGS Part A)*, which recommends that frequency of detection, concentration and toxicity, etc., only be used to eliminate chemicals when conducting a risk assessment on a large number of chemicals is infeasible. Region 7 recommends carrying all detected site-related contaminants through the risk assessment. Certainly risk-based screening can be used to distinguish between risk-drivers and chemicals representing minimal risk (Refer to Specific Comments 1 and 3).
2. The document proposes the use of surrogate compounds for toxicity values. In the absence of screening values for specific constituents, Region 7 recommends that the Clean Harbors facility consult with regional risk assessors regarding the use of provisional and surrogate toxicity values (Refer to Specific Comment 2).
3. A city ordinance that prohibits the use of groundwater for any purpose does not assure elimination of exposure to receptors. Unless strong scientific support for elimination of this pathway can be provided, the groundwater pathway should be quantitatively evaluated in the risk assessment. Reasons that may be considered for eliminating this pathway include: production capacity, water quality, and hydrogeologic features that would prevent the migration of contaminated groundwater into residential areas (Refer to Specific Comment 4).
4. It is not entirely clear if Clean Harbors intends to use ProUCL software to determine data distribution and estimate the 95% Upper Confidence Level (UCL) of the arithmetic mean. As a reminder, ProUCL Version 3.0, which is available at <http://www.epa.gov/esd/tsc/download.htm>, should be used to estimate exposure point concentrations (EPCs).
5. The work plan does not list the correct toxicity value hierarchy. Toxicity values should be obtained according to Office of Solid Waste and Emergency Response (OSWER) Directive 9285.7-53, dated December 5, 2003. The hierarchy is as follows:
 - **Tier 1- EPA's IRIS**
 - **Tier 2- EPA's Provisional Peer Reviewed Toxicity Values (PPRTVs)** – The Office of Research and Development/National Center for Environmental Assessment/Superfund

Health Risk Technical Support Center (STSC) develops PPRTVs on a chemical-specific basis when requested by EPA's Superfund program.

- **Tier 3- Other Peer-Reviewed Toxicity Values** – Tier 3 includes additional EPA and non-EPA sources of toxicity information. Priority should be given to those sources of information that are the most current, the basis for which is transparent and publicly available, and which have been peer reviewed. These sources include Health Effects Assessment Summary Table (HEAST), Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels, and California EPA toxicity values.

This directive can be found at <http://www.epa.gov/superfund/programs/risk/hhmemo.pdf>. Clean Harbors should contact Region 7 risk assessors for the most current provisional toxicity data.

6. In Clean Harbors' response to comments, they state that the USEPA vapor intrusion guidance encourages the incorporation of data from groundwater, but not necessarily from soil. This statement is inaccurate and misleading in that it suggests that groundwater data should be used in place of soil data when evaluating the vapor intrusion pathway. Note, the draft Vapor Intrusion Guidance specifically states that soil gas data are needed to evaluate the vapor intrusion pathway in the vicinity of a contaminant source in the unsaturated zone. It goes on to say that while groundwater data still can be evaluated, particularly if a contaminant plume extends beyond the unsaturated zone source, groundwater target concentrations may be inappropriate. Therefore, groundwater data should not be used to evaluate the vapor intrusion pathway in areas where soils are contaminated with volatile compounds. Clean Harbors must consider contaminated soil when evaluating the vapor intrusion pathway.

Specific Comments

1. **Section 2.2.1, Pg 2-2, P 2.** This paragraph states, "Those constituents whose maximum detected concentrations are below the screening values are eliminated as contaminants of interest (COI)." See General Comment 1.
2. **Section 2.2.1, Pg 2-2, P 3.** This section states in the absence of screening values for a specific constituent, "surrogate constituents may be used on the basis of structural and toxicological similarities." Although chemicals may have structural and toxicological similarities, Clean Harbors should contact Region 7 risk assessors for the approval of surrogate toxicity values.
3. **Section 2.2.4, Pg 2-3, P 1.** The work plan identifies constituents in surface water by comparing contaminants to the USEPA National Recommended Water Quality Criteria (WQC) for human health. Although the criteria and the methods used to develop them are health protective (some of which are similar to Region 9 tap water PRGs), Region 7 recommends using Region 9 PRGs for transparency and consistency with OSWER guidance and policy.
4. **Section 3.1 Pg 3-2, P 4.** This section states that the City of Wichita ordinance is in place to eliminate groundwater use in the vicinity of the site; therefore, all groundwater use pathways

are considered to be incomplete. Note, a city ordinance does not necessarily prevent the private use of groundwater nor is it absolute that such an ordinance will be in place in the future. Furthermore, according to Risk Assessment Guidance for Superfund (RAGS Part A) the groundwater pathway should be evaluated in the risk assessment if it exhibits sufficient production capacity and is of sufficient quality to support drinking water or other uses. If the groundwater exhibits these qualities and has the potential to migrate into residential areas, the future groundwater pathway should be evaluated in the risk assessment.

5. **Figure 3-1.** The conceptual site model (CSM) lists the current/future indoor worker incidental ingestion of surface soil as an incomplete exposure pathway. The ingestion of soil-derived dust by an indoor worker is a complete exposure pathway for metals and other compounds having low volatility. Although it is not necessary to carry this receptor through the risk assessment due to the evaluation of the outdoor worker, this pathway should be listed as complete.

For consistency with the text, the CSM should include shallow groundwater as a source for indoor air via subsurface vapor intrusion.

The CSM does not list inhalation as an exposure route for surface water and shallow groundwater exposures. In addition, no information has been provided in the work plan to support the complete elimination of this exposure route for these exposure mediums. Although this route may be incomplete or insignificant, inhalation is an exposure route for direct contact exposures to surface water or groundwater containing volatile compounds. The CSM should be revised accordingly. Additionally, the CSM should list inhalation as a complete exposure route under the surface water exposure scenario. If Clean Harbors considers it an insignificant route of exposure, then the risk assessment should provide supporting documentation.

6. **Table 3-2.** This table lists an exposure frequency of 30 days/year for the construction worker. Region 7 recommends that the construction worker exposure frequency be no less than 90 days/year.

This table also assumes a 100% gastrointestinal absorption factor for all constituents. Dermal toxicity values should be derived using chemical-specific gastrointestinal absorption factors provided in *RAGS Part E*.

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Mr. Martin Smith
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Clean Harbors Environmental Services, Inc.
13652 CR 180
Carthage, MO 64836

2. Article Number
(Transfer from s

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